

# GEOLOGICAL ASSESSMENT REPORT

(Lineament Array Analysis)



on the

**MIKE CLAIM**  
(Tenure 522351)

Kamloops Mining Division

**GEOLOGICAL SURVEY BRANCH**  
ASSESSMENT DIVISION

NTS M092L.047

29,034

Vancouver, B.C. Canada

Laurence Sookchoff, PEng

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## **SUMMARY**

The 370.452 hectare MIKE mineral claim located 200 kilometres northeast of Vancouver, British Columbia Canada, and between the major productive copper-moly porphyry deposits of the Highland Valley 20 kilometres west of the MIKE claim and the formerly productive Afton deposit 24 kilometres northeast of the MIKE claim.

The Highland Valley copper porphyry mineral deposits are hosted by the Guichon Batholith with the Afton mine copper-gold mineral deposit hosted by the Iron Mask Batholith. Both Batholiths intrude the Nicola Group of predominant volcanics in a northerly trending volcanic belt some 40 kilometres wide extending from near the United States border in the south to Kamloops Lake in the north. The Nicola Group is united by similar stratigraphy and tectonics, and is noted for its associated copper mines and prospects.

The MIKE claim is indicated to be entirely underlain by the two phases of the Nicola Group. The defining contact between the western volcanic facies to the west and the central volcanic facies to the east is indicated as a north northwesterly trending zone.

The Bertha-Molly showing is hosted by purplish amygdaloidal andesite with intercalated reddish tuffs. These rocks are strongly fractured and chloritized.

The Lineament Array Analysis has indicated that the Bertha-Molly showing, where copper values occur, does not occur at any structural controlling zone but is located on the rim of a semi-circular lineament, indicating potential structures on the edge of an intrusive. However, two localized areas of potential mineral controlling structures have been delineated where potential economic mineral zones may occur (Figure 4). The Bertha-Molly showing may be an indication of surface seepage from a structurally controlled, potentially economic zone of mineralization within an intrusive at depth.

## **INTRODUCTION**

A lineament array analysis was completed on the MIKE claim for the purpose of determining the potential structural controls for economic mineral zones on the claim and to fulfill the assessment requirements of Event Number (4111618).

## **PROPERTY DESCRIPTION & LOCATION**

The property consists of one claim with an area of 411.2 hectares. Particulars are as follows:

<u>Claim Name</u>	<u>Hectares</u>	<u>Tenure No.</u>	<u>Expiry Date</u>
MIKE	370.452	522351	2007/nov/17

The MIKE claim is located 200 kilometres northeast of Vancouver, a port city at the southwest corner of the Province of British Columbia and the third largest city in Canada, and 37 kilometres north of Merritt, a city that may provide the necessary infrastructure for a mining operation in the area. The Coquihalla 4-lane highway, passing through Merritt, connects Kamloops to the northeast and Vancouver to the southwest.

The MIKE property is also located within NTS 921.047, within the Kamloops Mining Division, and with central coordinates of 663208E 5590098N. The major copper-moly porphyry deposits of the Highland Valley are within 20 kilometres west of the MIKE claim. The formerly productive Afton deposit is 24 kilometres to the northeast.

## **ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE & PHYSIOGRAPHY**

Access to the MIKE claim is from the Coquihalla highway to a junction with the Logan Lake highway at the Logan Lake exit. The Logan Lake highway is then taken for approximately eight miles westward to a secondary road which provides access to the MIKE claim.

The MIKE claim occupies an area characterized by gently sloping hills with elevations ranging from 1,280 to 1,520 metres above sea level. Open meadows alternate with a dense forest of pine, fir and spruce, with very little or no underbrush. The area, within the B.C. dry belt, has a continental climate characterized by cold winters and hot summers.

Logan Lake, within nine kilometres west of the property, which provides the infrastructure for the Highland Valley mines, would be a source of experienced and reliable exploration and mining personnel. Kamloops is serviced daily by commercial airline and is a hub for road and rail transportation. Vancouver, a port city on the southwest corner of, and the largest city in the Province of British Columbia, is four hours distant by road and less than one hour by air from Kamloops.

# MIKE CLAIM: 522351

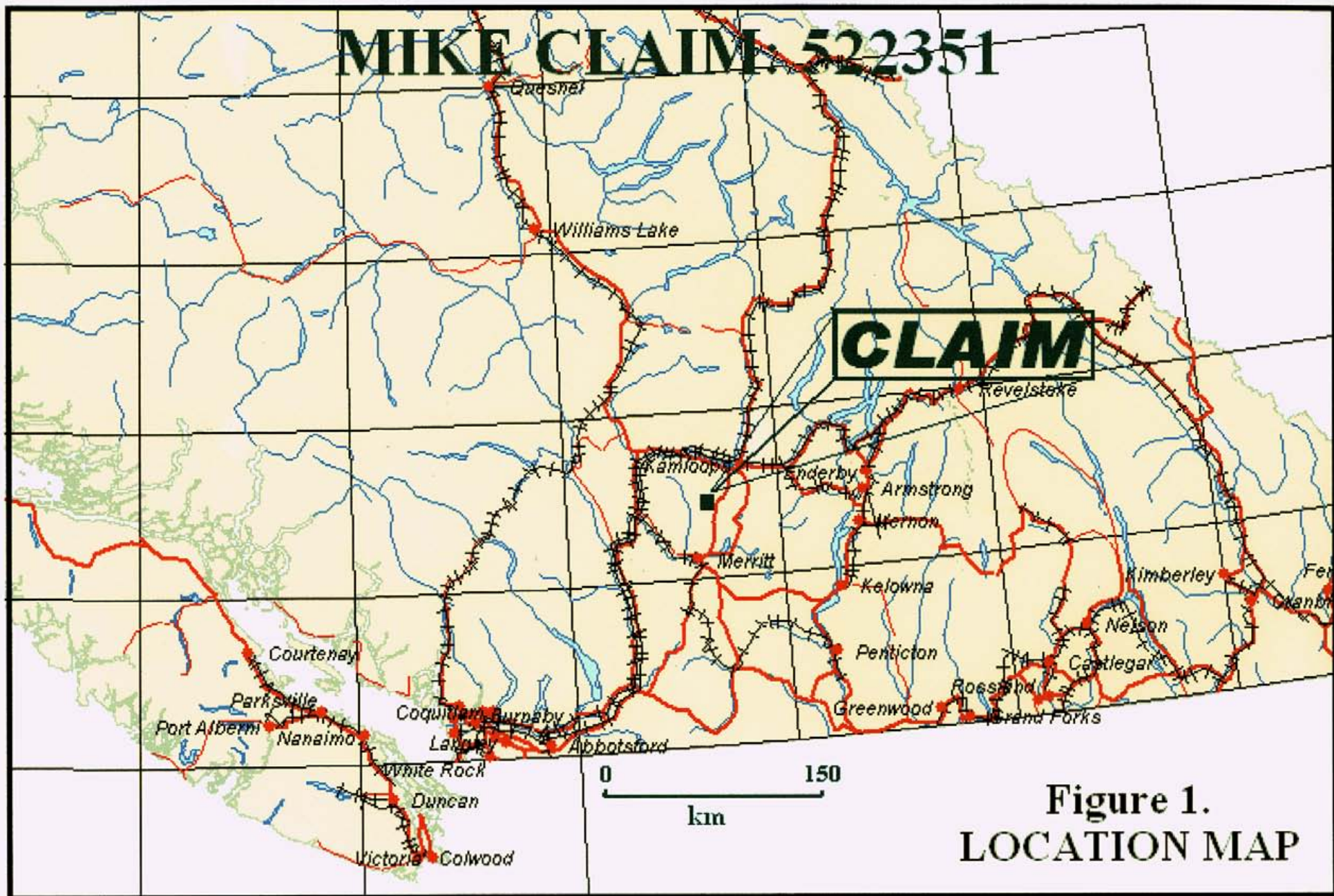


Figure 1.  
LOCATION MAP

### **HISTORY -Regional**

Current and former porphyry copper mining in the Logan Lake area stemmed from the discovery of copper mineralization in the Highland Valley area in 1899. The following historical account is summarized from a publication entitled, "The Discoverers".

"From the first discovery of mineralization in the Highland Valley area in 1899, exploration was not revived until 1915. It was not until 1954 that Spud Huestis and associates formed a syndicate, staked about a hundred claims and the Bethlehem Copper Corporation Limited came into being. Subsequently, a partnership was formed with Sumitomo, additional exploration and development followed, and by the end of 1962, the Bethlehem mine was in production."

"Another "Explorer", Egil Lomtzsen, commenced exploration in the Highland Valley in 1954 "discovered" the Lomex porphyry copper deposit. Lomex was brought into production by Rio Algom Mines in 1972 and at that time was the largest base metal mining operation in Canada, as well as the most modern and efficient. Additional significant porphyry deposits were discovered and put into production. These productive deposits included the Highmont, which mill was the fourth such mill in the Highland Valley, and the Valley Copper deposit, the largest deposit of the Highland Valley. The Highland Valley had now become one of the world's largest and most prolific copper-moly producing areas in the world."

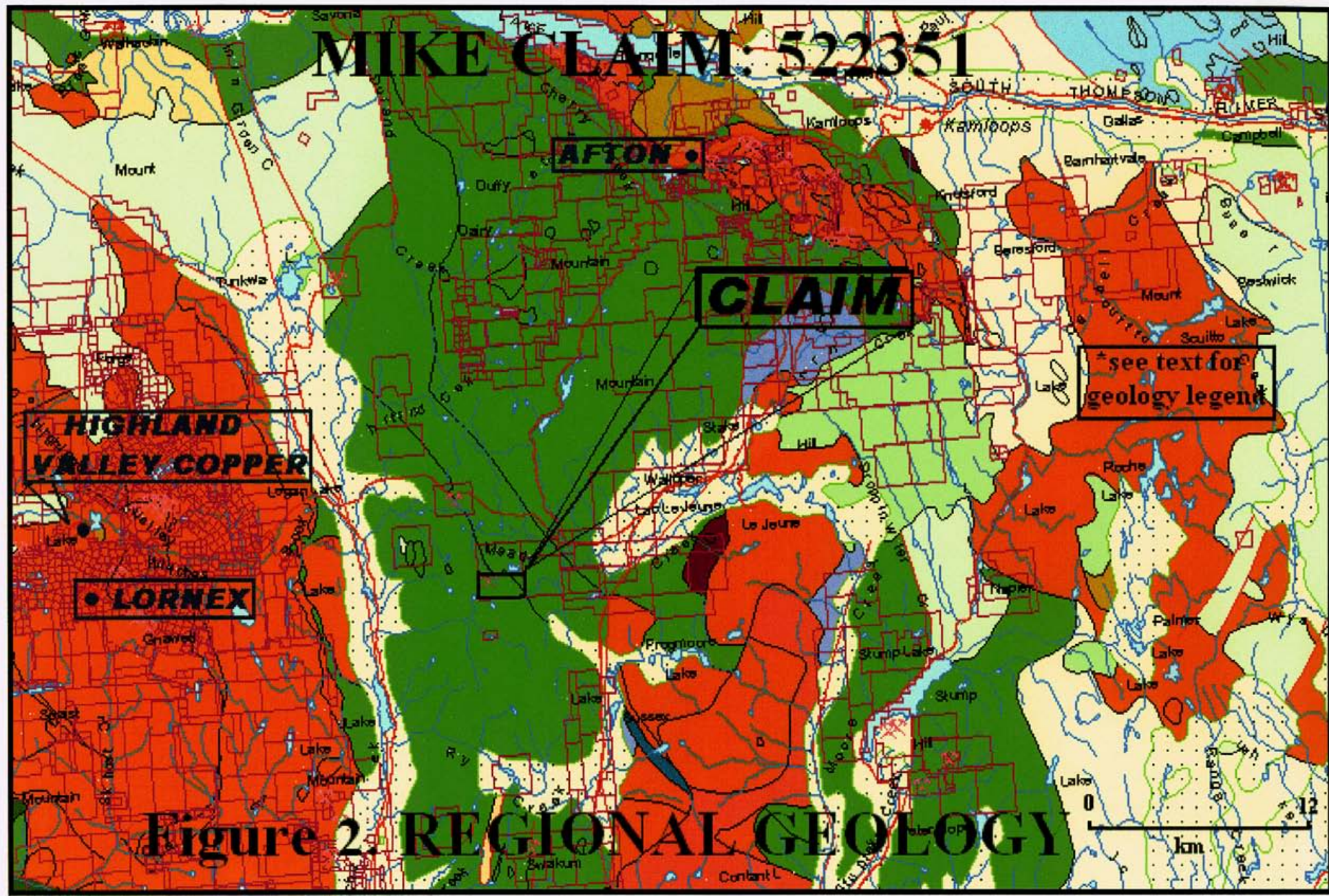
### **HISTORY -MIKE Claim**

A reported 31 tonnes was shipped from the Lost group, located about 457 metres west of an old shaft. The shipment yielded 218 grams of silver and 626 kilograms of copper (MINFILE 092ISE012).

### **GEOLOGY: REGIONAL**

Regionally, the property is situated within the Quesnel Trough, a 30 to 60 km wide belt of Lower Mesozoic volcanic and related strata enclosed between older rocks and much invaded by batholiths and lesser intrusions (Campbell and Tipper, 1970). The southern part is the well-known Nicola belt, continuing nearly 200 km to its termination at the U.S. border. The Nicola belt is enveloped by the Guichon Creek Batholith, host to the major porphyry copper mines of the Highland Valley, to the west, the Wild Horse Batholith to the east, and the Iron Mask Batholith, host to the former Afton Mine, to the north northeast.

The Guichon Batholith is comprised of varying phases of intrusive with the ore-bodies of the Highland Valley not restricted to any one phase. The Bethlehem Copper JA deposit occurs in and adjacent to a quartz plagioclase aplite stock which intruded rocks of the Guichon variety and Bethlehem phase of the Guichon Creek Batholith. The largest deposit of the camp, the Valley Copper deposit, is entirely in quartz monzonite of the Bethsaida phase and is west of the Lomex fault.



**Figure 2. REGIONAL GEOLOGY**

**GEOLOGY: REGIONAL (cont'd)**

The Lornex and the Valley Copper ore-bodies in the Highland Valley are located at the low edge of an airborne magnetic high. The magnetic high traces the Highland Valley and the Lornex fault systems and clearly indicates the fault pattern of the system and the ore-bodies occurring within a magnetic low due to the supergene and dynamic related destruction of magnetite.

The ore-deposits of the Highland Valley are structurally controlled. Movements on the Lornex and Highland Valley faults occurred simultaneously and alternatively in the final phases of intrusion of the Guichon Batholith. The fault planes provided the openings for the admission and deposition of mineral and igneous matter.

**GEOLOGY: MIKE CLAIM**

The MIKE claim is indicated to be entirely underlain by the two phases of the Nicola Group. The defining contact between the western volcanic facies to the west and the central volcanic facies to the east is indicated as a north northwesterly trending zone.

The Bertha-Molly showing is hosted by purplish amygdaloidal andesite with intercalated reddish tuffs. These rocks are strongly fractured and chloritized.

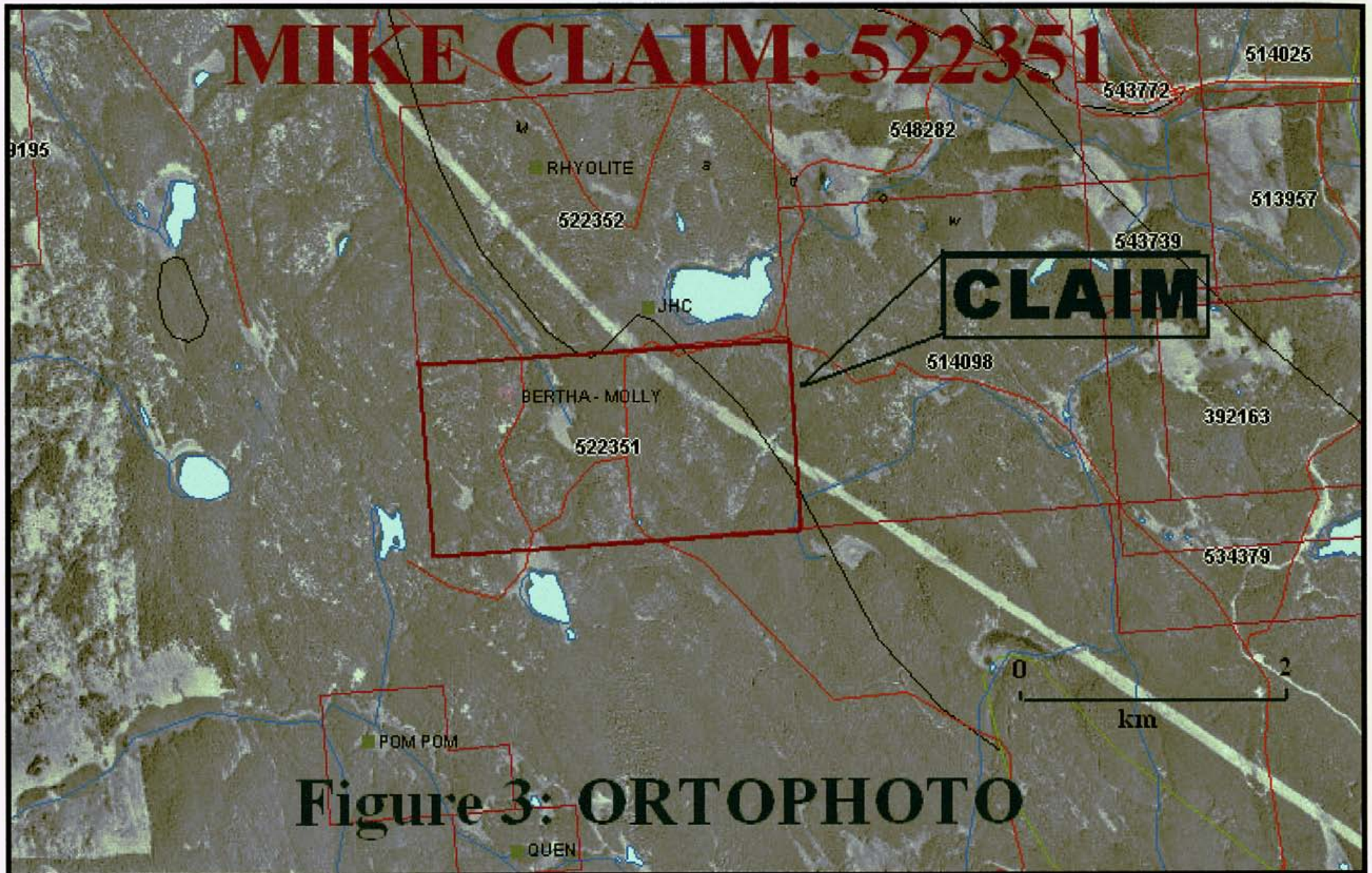
**MINERALIZATION: REGIONAL**

Highland Valley Copper operates two distinct mines, the Valley mine and the Lornex mine, and between the two has measured and indicated ore reserves of 761 million tonnes of 0.408 per cent copper and 0.0072 molybdenum. The ore reserves of each mine are: Valley mine - 627 million tonnes at 0.418 per cent copper and 0.0056 per cent molybdenum; Lornex mine - 135 million tonnes at 0.364 per cent copper and 0.0144 per cent molybdenum. The individual mine reserves are calculated at an equivalent cutoff grade of 0.25 per cent copper using a molybdenum multiplying factor of 3.5 (CIM Bulletin July/August 1992, pages 73,74).

Mining is carried out in the two mines simultaneously at a proportion of 80 per cent in the Valley mine and 20 per cent in the Lornex mine, and the ratio is projected to remain much the same over mine life. Published reserves at January 1, 1995 were 539.7 million tonnes grading 0.42 per cent copper and 0.0073 per cent molybdenum. The mine life is estimated to be about fourteen more years (Information Circular 1995-9, page 6).



# MIKE CLAIM: 522351



**Figure 3: ORTOPHOTO**

## **GEOLOGICAL MAP LEGEND**

### **PLEISTOCENE TO RECENT**

- PIRal** unnamed alluvium till  
**PiRvk** unnamed alkalic volcanic rocks

### **EOCENE**

- Penticton Group**  
Alkalic volcanic rocks

### **UPPER TRIASSIC**

#### **Nicola Group**

- uTrN** undivided volcanic rocks  
**uTrNW**  
**Western Volcanic Facies**  
unnamed volcanic rocks  
**uTrNC**  
**Central Volcanic Facies**  
andesitic volcanic rocks  
**uTrNE**  
**Eastern Volcanic Facies**  
lower amphibolite/kyanite grade metamorphic rocks

### **LATE TRIASSIC TO EARLY JURASSIC**

#### **Guichon Creek Batholith**

- LTrJGBqd**  
**Border Phase**  
quartz diorite intrusive rocks  
**LTrJGG**  
**Gump Lake Phase**  
granodiorite intrusive rocks

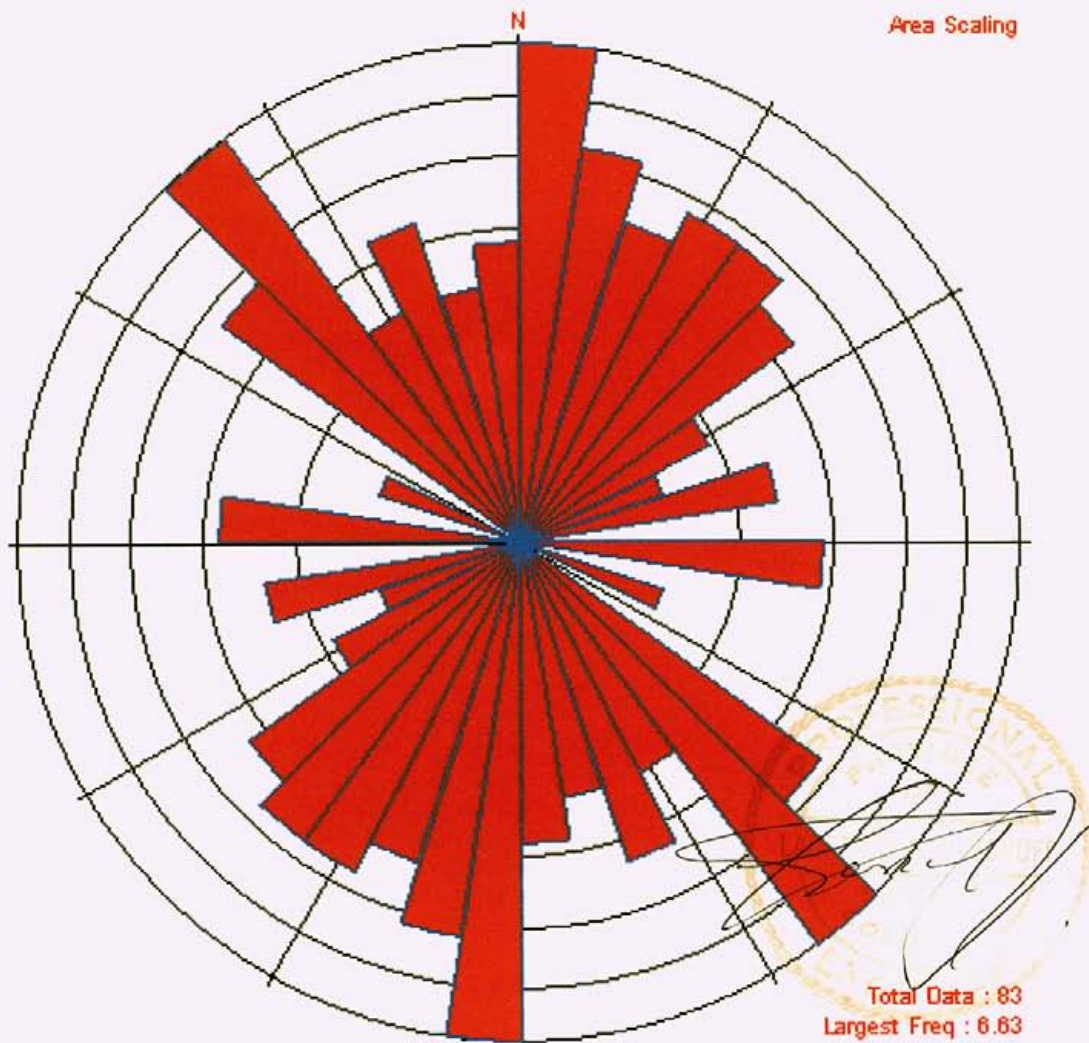
# MIKE CLAIM: 522351



*Figure 4. MIKE CLAIM LINEAMENTS*

### MINERALIZATION: MIKE CLAIM

Mineralization at the Bertha-Molly showing is of malachite, azurite, chalcopyrite, cuprite, and pyrite hosted by shears and fracture fillings in vesicular volcanics and red tuffs. Mineralization is structurally controlled with an apparent north trend. A common alteration is calcite and epidote with silicification becoming stronger at depth (MINFILE 09ISE012).



**Figure 5.** Rose diagram showing the 83 lineaments as determined on the MIKE claim.

## **2006 LINEAMENT ARRAY ANALYSIS**

A lineament array analysis of the MIKE claim was completed; the purpose of which was to determine the potential structural controls that may have resulted in the localization of the known mineral zones on the property and to assess the property for other potential mineral controlling structures.

Ortho topographical maps were downloaded from the BC Government supported MapPlace and were utilized for the lineament array analysis in a stereoscopic analysis which was accomplished using a stereographic projection viewing of the topographical maps. The 83 observed lineaments were marked on an overlay (Figure 4). The lineaments were classified into a 5° interval whereupon a RockWare Stereostat software program was utilized to create a rose diagram of the lineaments as indicated on the accompanying Figure 5. The dominant structural trend was indicated predominantly in a north-northwesterly (305-360) and a north-northeasterly (0-060) direction with minor easterly indicated structures.

The Bertha-Molly showing is not indicated to occur at any intersection of indicated structures; however, it is located on the rim of a semi circular lineament, indicating potential structures on the edge of an intrusive.

## **CONCLUSIONS**

The results of the Lineament Array Analysis have indicated that the Bertha Molly mineral showing, where copper mineralization occurs hosted by shears and fracture fillings in vesicular volcanics and red tuffs of the Nicola volcanics. Two other localized areas of potential mineral controlling structures have been delineated (Figure 4) where potential economic mineral zones may occur. The Bertha Molly mineral showing may be an indication of surface seepage from a structurally controlled, potentially economic zone of mineralization within an intrusive at depth.

Respectfully submitted  
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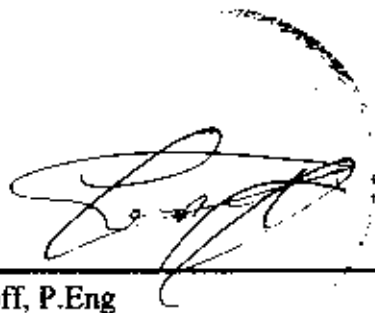
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**CERTIFICATE of AUTHOR**

I, Laurence Sookochoff, P.Eng. do hereby certify that:

1. I am a Consulting Geologist and principal of Sookochoff Consultants Inc. with an address at 120 125A-1030 Denman Street, Vancouver, BC V6G 2M6
2. I graduated with a degree in Bachelor of Science from the University of British Columbia in 1966.
3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia.
4. I have worked as a geologist for a total of 40 years since my graduation from university.
5. I am responsible for the preparation of this technical report titled Geological Assessment Report on the MIKE Mineral Claim dated March 1, 2007 "Technical Report").
6. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.



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Laurence Sookochoff, P.Eng

**Statement of Costs**

Lineament Array Analysis	\$ 2,500.00
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